

Physical Examination of Shoulder

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Introduction

- Accurate history taking: Important
- Examination above and below the shoulder
- Compare with contralateral shoulder

Chief Complaint

- Pain / Abnormal sound / Instability / Weakness / Stiffness

Basic Examination

Insepection

- Attitude / Swelling, deformity, color change / Muscle atrophy / Scapular winging

Palpation

- Pain / Abnormal sound / Instability / Weakness Stiffness

Manual muscle tests

A. Supraspinatus muscle test

1. Empty can test (Jobe' s test)
2. Full can test

* Kelly et al.: EMG activities of the supraspinatus muscle in both the "Full can" and "Empty can" tests were similar but that "Full can test" was less pain provocative.

* Itoi E et al.: Both tests are equivalent in diagnostic accuracy. Considering pain provocation, the full can test may be more beneficial in the clinical setting.

B. External rotator muscle test

- Infraspinatus muscle

C. Internal rotator muscle test

- Weakness of pectoralis and of subscapularism
- Not specific for any one muscle

Provocative tests

A. Subacromial impingement signs

1. Neer impingement sign
 - Passively forward elevate the arm during stabilizing scapula
2. Hawkins impingement sign
 - 90° forward flexion and internal rotation
3. Painful arc sign

B. Coracoid impingement

1. Coracoid impingement test
 - Flex arm, internally rotate and adduct
 - Impingement of humeral head or supraspinatus tendon to coracoid process

C. Internal impingement test?

1. Relocation test
 - For internal impingement and anterior instability
 - Pain disappeared: internal impingement
 - Sense of instability disappeared: instability

D. Rotator cuff integrity tests

1. Drop arm sign
 - SS integrity
 - Full thickness rotator cuff tear, usually in massive rotator cuff tear
2. External rotation lag sign (ERLS)
 - At least SS and IS tear
 - With possible SC tear

* False positive in suprascapular nerve palsy

3. Drop sign

- 40% of SS and IS tear

- 50% of SS, IS, SC tear

* False positive in suprascapular nerve palsy

E. Subscapularis tendon integrity

1. Lift off test

2. Belly press test

3. Napoleon sign

4. Internal rotation lag sign: maintenance of lift off test

F. Biceps tests

1. Speed's test

2. Yergason's test

3. Biceps instability test

- Palpate biceps in the groove while taking the arm from an abducted external rotated position of internal rotation

- Palpable or audible painful click → subluxation or dislocation of biceps tendon

G. Tests for SLAP lesion

1. Compression-rotation test

- McMurray's of the shoulder

- Sensitive for labral tears, not specific for SLAP

2. Crank test

- Axial loading on 160° elevated shoulder with maximum internal and external rotation

- Labral tears, not specific for SLAP

3. Active compression test (O'Brien)

- Arm forward flexed 90° with elbow extended, arm adducted 10 to 15°, maximum internal rotation (thumb down position), examiner applies resisted downward force to arm, repeat the maneuver in maximally supinated position

- A click or pain that decrease in supinated position

- Positive for SLAP, AC arthritis

4. Anterior slide test

- Hand on hip, axial load along arm to create shear

- Produce click or pain

5. Biceps Load test
 - Apprehension sign disappears with resistive elbow flexion
 - Superior labral integrity in anterior instability
6. Biceps Load test II
 - Arm elevated 120°, maximum external rotation, elbow flexed 90°, forearm supinated, resisted elbow flexion
 - Pain during resisted elbow flexion
 - SLAP lesions specifically
7. Pain provocation test or Mimon's test
8. Biceps tension test
9. Other SLAP test: SLAPrehension test, Relocation test, Mayo shear test, etc

H. Ac joint tests

1. Cross arm adduction stress test (Horizontal adduction test)
 - Examiner passively forward flexes the arm 90° and then horizontally adducts the arm as far as possible
 - Localized pain on AC joint
 - AC joint lesion, posterior capsular tightness
2. AC resisted extension test
 - Arm flexed 90 degrees, elbow bent, resist arm extension horizontal plane
 - Pain on AC joint
 - AC joint lesion
3. Active compression test
 - See SLAP
 - Pain should localize on AC joint

I. Laxity test

To assess capsuloligamentous laxity
To reproduce mechanical symptom
To determine the degree and direction of laxity

1. Anterior and posterior drawer
 - * Grading system: modified Hawkins scale
 - I: to the glenoid rim, but not over glenoid edge
 - II: goes over the rim but spontaneous reduction when the force is removed
 - III: locks out
2. Load and shift test, Push-pull test
 - One hand holds scapula. Other hand hold proximal arm and reduces humeral head concentrically in glenoid fossa. Then shifts humeral head anteriorly and posteriorly

3. Sulcus test

- In neutral position and in external rotation
- If not decreased with ER ? Incompetence of rotator interval

4. Generalized laxity signs

J. Instability test

These tests evaluate the ability of the shoulder to maintain stability when the ligamentous restraints are placed under tension.

1. Anterior instability test

A) Apprehension test, Crank test, Fulcrum test

- To assess the continuity of the anteroinferior GH ligament complex
- Can evaluate middle GH ligament in 45 degree abduction
- Sensation of Subluxation, dislocation, restriction of ER due to apprehension or pain located posteriorly

B) Relocation test

- Originally for internal impingement
- Alleviation of symptoms of apprehension test

2. Posterior instability test

A) Posterior apprehension test: Jerk test

- Sudden jerk with posteriorly directed force to the flexed and internally rotated shoulder
- Second jerk when returned to original position

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